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METHODS OF TEST FOR POLYBUTADIENE RUBBERS

PART I METHOD OF TAKING OUT TEST PORTIONS FROM SAMPLE BALES

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Indian Standard

METHODS OF TEST FOR POLYBUTADIENE RUBBERS

PART I METHOD OF TAKING OUT TEST PORTIONS FROM SAMPLE BALES

0. FOREWORD

0.1 This Indian Standard (Part I) was adopted by the Indian Standards Institution on 10 December 1981, after the draft finalized by the Rubber Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

0.2 In this series methods of test for polybutadiene rubbers are given. Test methods for the following characteristics are similar to those for styrene butadiene rubbers and the methods indicated below shall be used in these cases:

Volatile matter	SBR : 1 of IS : 4518 (Part I)-1967*;
Mooney viscosity	SBR : 8 of IS : 4518 (Part I)-1967*;
Solvent extract	SBR : 9 of IS : 4518 (Part II)-1971†; and
Oil content	SBR : 10 of IS : 4518 (Part II)-1971†.

1. SCOPE

1.1 This standard (Part I) prescribes the method of taking out test portion from sample bales.

2. PROCEDURE

2.1 Take out piece or pieces of rubber from the selected bale by cuts through the entire bale perpendicular to the surfaces of largest area of the bale. The total mass of the material shall be between 600 g and 1 500 g depending on the tests to be done. Using a tool similar to that shown in

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*Methods of tests for styrene-butadiene rubbers (SBR): Part I Determination of volatile matter, total ash, organic acid, soap, antioxidants, bound styrene and mooney viscosity.

†Methods of test for styrene-butadiene rubbers: Part II Determination of solvent extract and oil content.

Fig. 1, obtain plugs of rubber by cutting through the bale. Do not use any lubricant with the tool to obtain piece or pieces of the material. If the material is not tested immediately, place it in a narrow air-tight container of not more than twice the volume of the material or keep it wrapped in two layers of aluminium foil until required.

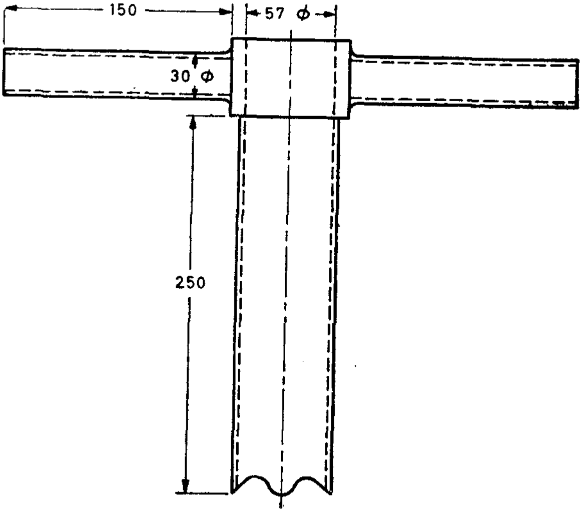

Fig. 1 Sampling Tool

All dimensions in millimetres.

2.2 Determination of volatile matter is done on a portion of about 450 g taken from the test portion specified in **2.1**. The dried test portion is retained for other chemical tests.

2.3 Homogenization — For the determination of Mooney viscosity a test portion of about, but not more than 250 g, is taken and massed by passing 10 times between the rolls of the laboratory mill with rolls having 15 ± 0·05 cm diameter with a working distance between the guides at the nip of 25 to 28 cm. The speed of the slow roll shall be 24 ± 0·5 rev/min and the gear ratio between 1 : 1 and 1·5 : 1. Set the distance between the rolls at 1·30 ± 0·15 mm as determined by a lead strip and maintain the roll surface temperature at 50 ± 5°C. In passes second to ninth inclusive the test portion should be doubled upon itself and on the tenth pass it should be sheeted without doubling. Do not allow the test portion to band on the mill rolls and return any solid matter parting from the rubber to it.

Cut out discs 4·5 cm in diameter from the thickest part of the sheet and allow them to rest at room temperature for at least 30 minutes before carrying out the Mooney viscosity test.

2.4 The rest of the test portion not required for Mooney viscosity test is retained for testing the vulcanizate characteristics.

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